

A rapid review of parent-led, play-based interventions for children with ASD

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Introduction

Autism Spectrum Disorder (ASD) affects 2.8 million children and their families in the UK (The National Autistic Society 2015); symptoms include persistent deficits in social communication and interaction across multiple contexts, with restricted, repetitive patterns of behaviour, interests, or activities (American Psychiatric Association 2013). Occupational therapists (OTs) will often be involved in the care of children with ASD, focusing on how the condition affects the occupations and roles of a child and their family (College of Occupational Therapists 2009). The most common intervention for childhood ASD in the United Kingdom is Applied Behavioural Analysis; however there is beginning to be a move towards more holistic, child-centred treatment focused on relationship and play, often involving coaching parents to use techniques at home, rather than therapist-led treatment in clinical settings.

This study therefore aimed to review all available evidence to answer the following questions:

Research Questions

- 1) How effective are parent-mediated play interventions for children with ASD?
- 2) What is the impact of these interventions on the family?

Methods

Nine electronic databases were searched on 17th June 2015 (see figure 1), and three relevant journals were hand searched from 2003 – June 2015.

Database	Results
PubMed	1,234
PsycINFO	1,583
CENTRAL	106
CINAHL	533
AMED	131
The British Education Index, Education Research Complete, Child Development and Adolescent Studies, ERIC	1,310
Total	4,897

Figure 1

These results were then screened for duplicates and measured against inclusion and exclusion criteria developed from a PICOT table (figure 2). In addition, quality assessments were carried out using the Jadad Scale (Jadad et al 1996) and CONSORT Checklist (Moher et al 2010) for quantitative studies and the McMaster Critical Review Form for Qualitative Studies (Letts et al 2007) for qualitative studies. Any study that did not score 'adequate' in the majority of categories was excluded.

Population	Intervention	Comparison	Outcome	Type of Design
•Children (age 0-6) •Diagnosis of ASD/suspected ASD •Including related conditions e.g. Asperger's Syndrome	•Play-based therapy •Specific and/or manualised or non-specific but including elements of play	•Any	•Any	•Quantitative •Randomised Controlled Trials (RCTs) •Qualitative •In-depth interview techniques

Figure 2

After the screening process, a total of 5 articles were included in a descriptive synthesis, 4 of which were also included in a meta-analysis (see PRISMA flow diagram, figure 3).

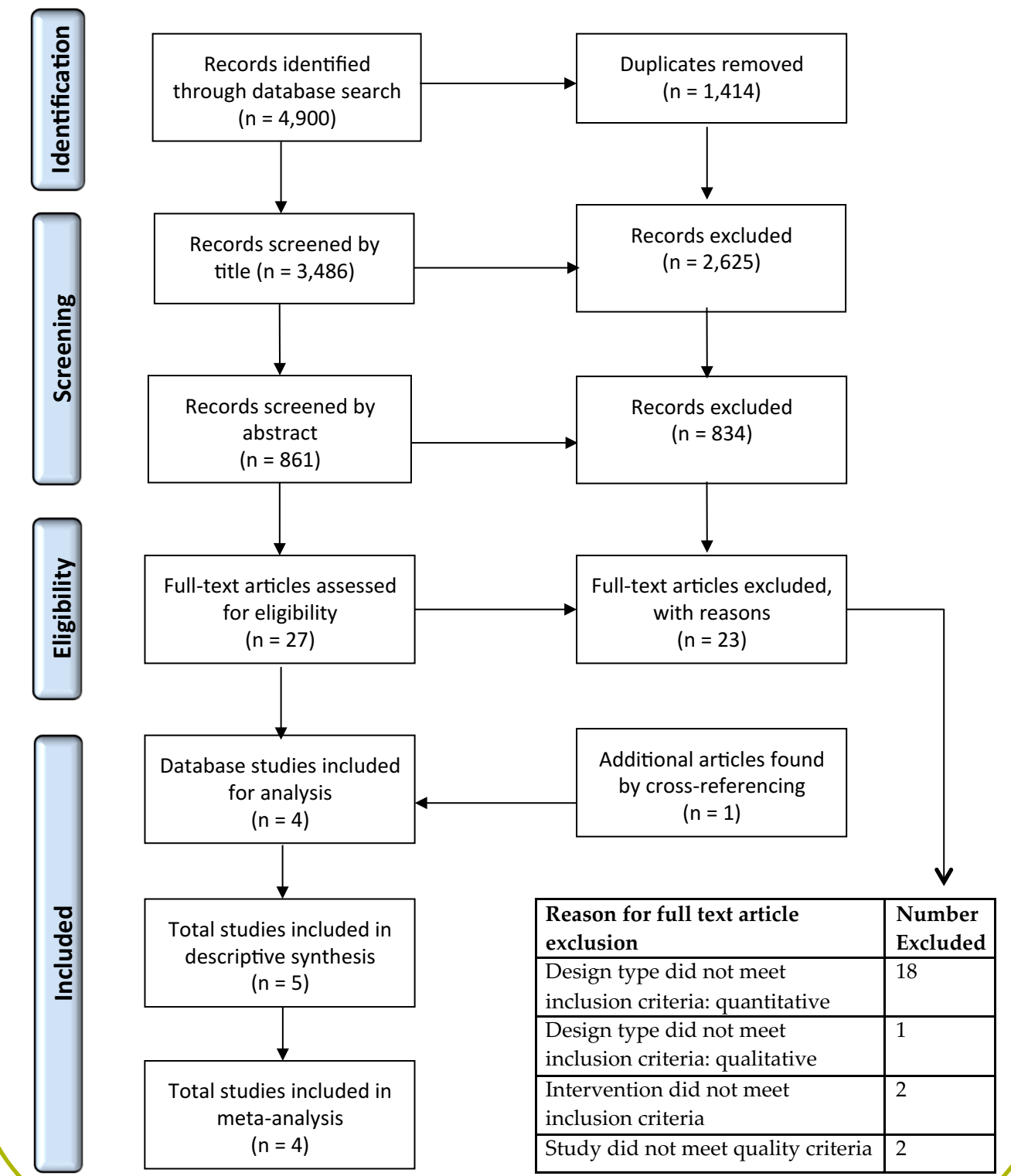


Figure 3: PRISMA Flow Diagram (Liberati et al 2009)

Results

5 papers were included in the descriptive synthesis, falling into 2 categories: the Kasari (2014) and Siller (2013) studies used parent coaching in Focused Playtime Intervention (FPI). The Solomon (2014), Casenhiser (2013) and Pajareya (2011) studies used Developmental-Individual Differences-Relationship (DIR) Floortime, with parent coaching and an additional requirement that parents use the intervention for between 2-3 hours per day. The Pajareya study was a pilot RCT; the other 4 were full RCTs. See figure 4 for location of themes.

	DIR Floortime			FPI	
	Solomon (2014)	Casenhiser (2011)	Pajareya (2011)	Kasari (2014)	Siller (2013)
1. Improvement in parental responsiveness	✓	✓		✓	✓
2. Improvement in child language across both groups	✓	✓		✓	✓
3. Significant improvement in parental responsiveness did not lead to significant improvement in child language	✓	✓		✓	✓
4. Improvement in child joint attention	✓	✓			
5. Improvement in quality of parent-child interaction	✓	✓	✓		
6. Improvement in child social-emotional development	✓		✓		
7. Improvement in ASD symptom severity	✓		✓		

Figure 4

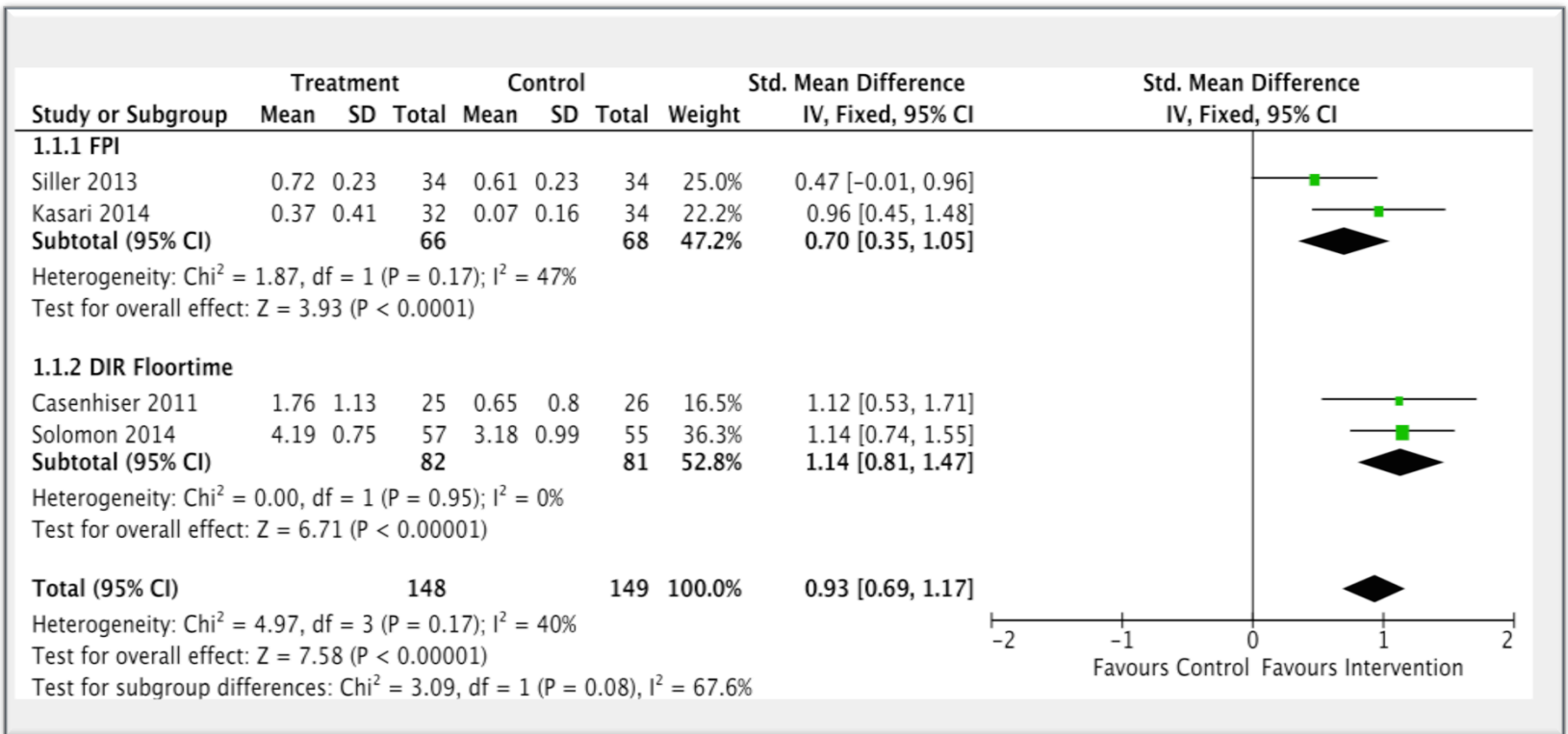


Figure 5

Parental Stress and Depressive Symptomatology

Solomon (2014) found parental stress decreased for both groups, despite the fact that the treatment group were required to spend an additional 2 hours per day in therapeutic interaction with their child. Depressive symptoms also tended to reduce in the treatment group.

Child Language

All studies found significant effects on language across both treatment and control groups. The 2 FPI studies found conditional effects: Kasari (2014) found stronger effects for children with less severe ASD, whereas Siller (2013) found the opposite. Both should be viewed with caution. As for Floortime, Casenhiser (2013) found that measures of social interaction at baseline were significant predictors of language gain. This could be due to the mismatch between the aims of standardised language assessments and those of social-communication interventions such as these.

Child Joint Attention

The FPI studies found no significant effect; the Floortime studies found significant effects on a multi-item measure that included joint attention.

Symptom Severity

2 Floortime studies found significant improvement in ASD severity.

Social-Emotional Development

2 Floortime studies found significant improvement, although this was using a measure designed by the Floortime authors so this could be unreliable.

Strengths/Limitations

This review benefits from rigorously following the step-by-step process of reviewing, and from the inclusion of a meta-analysis to strengthen findings. Limitations include the exclusion of studies not written in English and unpublished theses, for pragmatic reasons. This introduced selection and publication bias. A larger sample could also have been found had the intervention of interest been defined differently, e.g. those following the developmental social-pragmatic (DSP) model; this would have gathered more evidence for analysis and made findings more reliable.

Conclusions

Overall, the descriptive findings suggest that the DIR Floortime formula of low-intensity parent coaching plus high-intensity parent-child play shows promise as an effective intervention for ASD, particularly where parent-child relationship quality is concerned. More research is required to accurately measure language outcomes and examine the tolerability and impact of these interventions on family life.

American Psychiatric Association (2013) *Diagnostic and statistical manual of mental disorders: DSM-5* (5th edition). Washington, DC: American Psychiatric Publishing.

Casenhiser DM, Shanker SG and Stieben J (2013) Learning through interaction in children with autism: preliminary data from a social-communication-based intervention. *Autism*. 17 (2), 220-41.

College of Occupational Therapists (2009) Occupational therapy defined as complex intervention. London: COT.

Jadad AR et al (1996) Assessing the quality of reports of randomized clinical trials: is blinding necessary? *Controlled Clinical Trials*. 17 (1), 1-12.

Kasari C et al (2014) Randomized controlled trial of parental responsiveness intervention for toddlers at high risk for autism. *Infant Behavior & Development*. 37 (4), 711-21.

Letts L et al (2007) Critical Review Form – Qualitative Studies (Version 2.0). Hamilton, ON: McMaster University.

Liberati A et al (2009) The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration. *British Medical Journal*, 339 (2700).

Moher D et al (2010) CONSORT 2010 Explanation and Elaboration: updated guidelines for reporting parallel group randomised trials. *British Medical Journal*. 340 (7748), 698-702.

The National Autistic Society (2015b) *Statistics: how many people have autism spectrum disorders?* [Online] Available at: <http://www.autism.org.uk/> (accessed 19/05/15).

Pajareya K and Nopmaneejumruls K (2011) A pilot randomized controlled trial of DIR/Floortime parent training intervention for pre-school children with autistic spectrum disorders. *Autism*. 15 (5), 563-77.

Siller M, Hutman T and Sigman M (2013) A parent-mediated intervention to increase responsive parental behaviors and child communication in children with ASD: a randomized clinical trial. *Journal of Autism and Developmental Disorders*. 43 (3), 540-55.

Solomon R et al (2014) PLAY Project Home Consultation intervention program for young children with autism spectrum disorders: a randomized controlled trial. *Journal of Development and Behavioral Pediatrics*. 35 (8), 475-85.